Public Works (1908) Department.

G.O., No. 381/382

DATED 19-10-1908.

The Notes in this G.O. have been printed.

[Despatch Abstract.]

Sheds for lascars and a repair Shop at Periyar, Madura Dt.

Two estimates, amounting to Rs 8893 and Rs 8,596 respectively for the Construction of —, Sanctioned with remarks and a Copy of the Pros: ordered to be forwarded to the G.A.I. for information

P. W. 9.

Indexed.

Sheds for lascars and a repair Shop at Periyar, Madura Dt.

Forwarding to the G.A.I. a copy of the Pros: Sanctioning two estimates amounting to Rs 8,893 & Rs 8,596 respectively for the Construction of —

19/10

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

IRRIGATION.
ACCOUNT.

Government of Madras.

PUBLIC WORKS DEPARTMENT.

Recd.	} 1908.	*Enclosures*	
Regd.		*Spare copies.*	

G.O., Nos. 381, 382 I., 19th October 1908.

Sheds for lascars and a repair shop at Periyar, Madura district

Forwarding to the Government of India a copy of the Proceedings sanctioning two estimates amounting to Rs. 8,893 and Rs. 8,596, respectively, for the construction of —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

I

Letter—from S. D. Pears, Esq., Superintending Engineer, VI Circle.
To—the Chief Engineer for Irrigation.
Dated—Trichinopoly, the 19th March 1907.
No.—191 C.E.

I have the honour to forward herewith, for your approval and sanction of Government, an estimate, amounting to Rs. 7,200, for constructing huts for 1 head lascar and 12 lascars to be employed on the regulator at the right bank escape of Periyar lake.

2. Their necessity is explained in the report attached to the estimate.

3. The work is not remunerative, but being required for the development of the Periyar Project the cost should be charged to the Open Capital Account. If sanctioned without delay it will be completed before the end of March 1908.

4. The regulator may be in working order by August next, from which date it will in that case be necessary to employ these lascars. The huts should be ready for them by then or as soon as possible afterwards. It is therefore requested that early sanction may be obtained to carry out the work in time.

II

Letter—from S. D. Pears, Esq., Superintending Engineer, VI Circle.
To—the Chief Engineer for Irrigation.
Dated—Trichinopoly, the 27th March 1907.
No.—204 C.E.

In continuation of this office No. 191 C.E., dated 19th March 1907, I have the honour to forward herewith a survey plan showing the site chosen by me for the proposed quarters for the lascars at Periyar.

The Sanitary Commissioner suggested a site on the spur above the cemetery, and he is no doubt right in considering this preferable on merely sanitary grounds. The administrative reasons, however, are all against it. It is exposed to the full force of both monsoons, there is no water nearer than the lake, the formation of the ground hides the regulator from view, it is at a great distance from the Superintendent's quarters, and the only access to the foot of the hill whether for drawing water or for attending to the regulator shutters is by a steep path, inconvenient at best, and almost prohibitive on wet monsoon nights when the regulator would most need watching.

III

Memorandum No. 1405, dated 11th April 1907.

With reference to letter No. 191 C.E., dated 19th March 1907, of the Superintending Engineer, VI Circle, the Chief Engineer for Irrigation has the honour to inform him that the estimate for constructing huts for lascars to be employed on the regulator at the right bank escape of the Periyar lake, submitted therewith, cannot be sanctioned until a full reply is received to paragraph 2 of this office Memorandum No. 198-O., dated 6th July 1906. Not only will lascars have to be provided for but also a certain number of fitters, etc., for the workshops which are proposed to be maintained.

There are some buildings already available, and it is only after settling the probable establishment to be provided for that the sites can be selected and buildings estimated for.

There is no extreme hurry for permanent sheds, as the lascars can live in temporary sheds, to begin with, but as soon as the whole question has been fully considered permanent sheds will be wanted for all who have to be permanently employed at Periyar.

(By order.)

T. W. S. SMYTH,
Asst. Chief Engineer for Irrigation.

To the Superintending Engineer, VI Circle.

IV

To the Superintending Engineer, VI Circle, No. 1523, dated 10th April 1908.

V

Letter—from J. H. MEDLICOTT, Esq., Superintending Engineer, VI Circle.
To—the Chief Engineer for Irrigation.
Dated—Camp Periyar, the 10th June 1908.
No.—302 C.E.

With reference to the correspondence ending with your Memorandum No. 1523, dated 10th April 1908, I have the honour to retransmit the estimate * received with your letter under reply together with the estimate, amounting to Rupees 7,860, for constructing a repair shop at Periyar.

* Constructing huts for 12 lascars and 1 head lascar for the regulator at the right bank escape at Periyar; estimate Rs. 7,200.

2. The necessity for the latter work has been accepted, and orders have been issued in your Memorandum No. 4016, dated 26th October 1906, to prepare a plan and an estimate for the work in consultation with the General Superintendent, Public Works Workshops.

3. The cost for the machine equipment was fixed by the General Superintendent who says that it is probable that there will be some savings in the items estimated for, as the prices quoted for the tools were taken from catalogues.

4. The repair shop will be a corrugated iron shed (as shown in the tracing enclosed) measuring 44′ × 15′, which, I think, will be sufficient for all purposes. The present engine of the "Resurrection" will be used with a small vertical boiler for working it, to drive a line of shafting from which a lathe, drilling machine and grindstone could be run by belting.

Provision has also been made for all the necessary tools required for the shop.

I request that the estimates now forwarded may be sanctioned at an early date.

The estimate for a lineman's hut at Kumili will be submitted shortly.

ENCLOSURES.

Report to accompany the estimate for constructing a workshop at Periyar.

	RS.
Amount of estimate	3,200

The estimate has been prepared with reference to Superintending Engineer's No. 89, dated 7th January 1907, and provides for constructing a workshop 44′ × 15′ as per plans accompanying.

The site will be near Mr. Keeling's old bungalow near the old tennis court on the island.

The pillars will be founded in cubes of concrete 2 feet cube; the machinery and the boiler will rest on cement concrete block 3 feet deep.

A rubble in mortar dwarf wall $1\frac{1}{2}' \times 1\frac{1}{2}'$ will run round the shed.

Flooring is omitted as it is not necessary.

The enclosure will be of corrugated iron sheets fastened to angle iron bars between posts of S. I. rails. The doors will be batten with strong hinges. The windows will be glazed.

The roof will be of corrugated iron sheets carried on iron trusses which will be secured to the iron rail pillars as shown in the detailed drawing.

The iron works, doors and windows will all be painted.

A workshop will be necessary to keep in repair the new regulator and head sluice gates and the steam launches and punts.

R. DECHAZAL,
Executive Engineer, Madura Division.

14*th November* 1907.

Report to accompany the estimate for constructing huts for lascars at Periyár.

	RS.
Amount of estimate	7,230

The construction of a new regulator (of 10 vents each 36 feet span) fitted with Stoney's gates, on the old flush escape of the Periyar lake necessitates the employment of lascars to regulate the shutters.

They will have to live near the regulator and as there is no accommodation at present available the huts now proposed are necessary. They will be in two lines, one for one head lascar and seven lascars and the other for five lascars as shown on the tracing accompanying.

The design calls for no special remarks.

Under the contract with Messrs. Ransoms and Rapier each shutter is to be capable of being lifted by two men against the maximum head of water. Assuming four men absent through sickness or otherwise (for the climate is unhealthy) the remaining eight lascars could lift four shutters simultaneously. The absorbing power of the lake is so great that sudden fluctuations such as occur in rivers can never occur here, and it is thought that the 12 provided for will be enough under the above circumstances.

S. D. PEARS,
Superintending Engineer, VI Circle.

16*th March* 1908.

VI

Note by the Chief Engineer for Irrigation.

With the last of his letters read above, the Superintending Engineer, VI Circle, submits two estimates, amounting to Rs. 7,200 and Rs. 7,860, respectively, (1) for constructing huts for lascars to be employed on the Periyar right bank escape and (2) for building a repair shop at Periyar. The estimate for the first work has been increased in this office to Rs. 7,230 owing to some errors found in the detailed calculations.

2. In the estimate for the second work, angle iron bars $1\frac{1}{2}'' \times 1\frac{1}{2}'' \times \frac{1}{4}''$ have been substituted for the round iron struts of $\frac{3}{4}''$ diameter allowed for the truss without affecting the total of the estimate. The scantlings of the other members of the truss and the horizontal angle iron bars allowed for the partitions seem unnecessarily heavy and are susceptible of reduction. The main shaft is apparently to be carried on old rail posts, but no details are shown as to the method of joining the bearing blocks and

it is doubtful if an unsupported vertical rail will be suitable. These points may, however, be considered by the Superintending Engineer during execution of the work. He should also see that the corrugated iron roof of both works is fastened with Windle's patent clips (*vide* metel price list of Messrs. Jessop & Co., Limited, Calcutta), as it is believed that this form of fastening will be found more satisfactory than those hitherto in use. The arrangement of the machinery shown in the plan will require modification as lathes are usually worked from a countershaft and not from the main shaft. With these remarks the estimates are recommended for sanction.

C. A. SMITH,
Chief Engineer for Irrigation.

Order—No. 381 I., dated 19th October 1908.

The following estimates are sanctioned :—

Imperial.
Capital expenditure not charged to Revenue.
49. Irrigation.
Periyar System.
Open Capital Account.
I. Works.
1. Head Works.
K. Buildings.
Unremunerative Works.

(*a*) Constructing sheds for lascars at the Periyar right bank escape.

	RS.
I. Works	7,230
II. Establishment	1,663
Total ...	8,893

(*b*) Constructing a repair shop at Periyar.

Estimate—

	RS.
I. Works	3,200
II. Establishment	736
III. Tools and Plant (2. Plant and Machinery)	4,660
Total ...	8,596

2. These sanctions are registered as Nos. 76 I. and 77 I. of 1908–1909, and will expire on the 31st March 1910.

3. The attention of the Superintending Engineer, VI Circle, is drawn to the remarks of the Chief Engineer for Irrigation in the foregoing note.

4. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

(True Extract.)

C. A. SMITH,
Joint Secy. to Government, P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, VI Circle, with plans and estimates.
,, Examiner, Public Works Accounts.

Endorsement—No. 382 I., dated 19th October 1908.

Forwarded.

(By order.)

C A. SMITH,
Joint Secretary to Government, P.W.D.,
Irrigation Branch.

PUBLIC WORKS DEPARTMENT
(IRRIGATION BRANCH).

NOTES CONNECTED WITH G.O., Nos. 381–82 I., DATED 19TH OCTOBER 1908.

[SUBJECT.—*Estimates amounting to Rs. 7,230 and Rs. 7,860 respectively for constructing (1) huts for lascars to be employed on the regulator at the right bank escape of the Periyár lake and (2) a repair shop at Periyár.*]

From the Superintending Engineer, VI Circle, No. 191-*C.E., dated* 19*th March* 1907.
" " *VI* " " 204-*C.E.* " 27*th* " "

Under Secretary—

The necessity for the work * is explained in the report. The Superintending Engineer requests that early sanction may be accorded for the execution of the work, as the huts should be ready for occupation by August next, by which time he (the Superintending Engineer) hopes to have the regulator in working order.

* Estimate No. 1 for constructing huts for lascars.

2. In this connection, reference is requested to paragraph 2 of this office memorandum No. 198-0, dated 6th July 1906, in which the Superintending Engineer, VI Circle, was asked to submit complete proposals for the working of the Periyár right bank escape including the strength and location of establishment proposed. No reply has been received from the Superintending Engineer and a reminder is kept below for approval.

In the meantime, the present estimate will be checked, if approved.

S. A. VENKATARAMIER.
4–4–07.

S. DORAISWAMI AIYAR.
4–4–07.

Reminder signed. Chief Engineer for Irrigation for approval of plans and estimates.

T. W. S. SMYTH.
4–4–07.

The estimate may be checked but should not be sanctioned until a full reply is received from the Superintending Engineer about establishment.

Not only will lascars have to be provided for but also a certain number of fitters, etc., for the workshops which are proposed to be maintained.

There are some buildings already available and it is only after settling the probable establishment to be provided for that the sites can be selected and buildings estimated for.

There is no violent hurry for permanent sheds as the lascars can live in temporary sheds to begin with, but as soon as the whole question has been fully considered, permanent sheds will be wanted for all who have to be permanently employed at Periyár.

Draft to Superintending Engineer accordingly.

C. A. SMITH.
4–4–07.

Under Secretary—

A draft memorandum to the Superintending Engineer is submitted.

S.A.V.
8-4-07.

S.D.
8-4-07.

[Issued as Memorandum No. 1405, dated 11th April 1907.]

Constructing huts for the lascars at Periyár right bank escape. Amount of estimate, Rs. 7,200.

First row consists huts for one head lascar and seven lascars.
Second row „ for five lascars.
Total, one head lascar and twelve lascars.

Each lascar is provided with two rooms, *i.e.*, 12′ × 10′ in front and 12′ × 8′ in rear with a verandah 5′ wide in front, covered over with corrugated iron roof supported by country wood ridge and purlins. The walls in foundations are 2 feet wide and 2 feet deep and are proposed to be built of roughstone in mud. The walls in basement are 1½ feet thick and 1¼ feet high and are proposed to be built of roughstone in mortar. The walls in superstructure are to be of roughstone in mud pointed in mortar inside and with cement outside. Doors, windows, posts, etc., are of country wood.

The estimate also provides for a shed containing two rooms each 15′ × 10′ for bathing purposes for females and males.

The estimate has been checked. Roughstone in mortar has been substituted for roughstone in mud for walls in foundations pending approval. The excess on this account is only Rs. 640.

M. VASUDEVA AIYAR.
25-5-07.

S. BHASKARA AIYAR.
26-5-07.

To lie over pending receipt of reply to Chief Engineer's No. 1405, dated 11th April 1907.

M.A.
1-6-07.

S.D.
1-6-07.

To the Superintending Engineer, VI Circle, No. 1523, *dated* 10*th April* 1908.
From the „ *VI* „ „ 302-*C.E.*, *dated* 10*th June* 1908.

Under Secretary—

The Superintending Engineer now retransmits the estimate of Rs. 7,200 for the construction of huts for lascars to be employed on the Periyár right bank escape regulator returned to him with this office memorandum No. 1523, dated 10th April 1908. He has also forwarded an estimate of Rs. 7,860 for the construction of a repair shop at Periyár.

2. The estimate for lascars' huts has already been checked and will, if approved, be now sanctioned.

For orders if the repair shop estimate may be checked for sanction. The papers connected with the repair shop are in Madras. It is submitted that the two estimates may be kept separate and sanctioned separately.

B. Gopala Rao.
29–6–08.

Yes.

C.A.S.
1–7–08.

The estimate should be compared with the proposed provision of lascars (in the file of establishment) before being sent to Madras.

T.W.S.S.
30–6–08.

Verified and found to be correct. Thirteen huts have been provided for in the estimate. In the Chief Engineer's memorandum in the file of establishment, appointment of thirteen lascars was approved.

B.G.R.
2–7–08.

Yes and when doing so please see that in the margin of the comparative statement of establishment I have noted in pencil * a new type of fastening for corrugated roofs of which Mr. Keeling told me and which should be specified to be used for the repair shop.

* Windles patent clips for corrugated iron (Messrs. Jessop & Co.).

C.A.S.
1–7–08.

Superintendent, Finance Section—

Estimate for constructing huts for lascars to be employed on the Periyár right bank escape.—The estimate has been checked. Roughstone in mud for walls in foundations and superstructure and roughstone in mortar for walls in basement have been allowed by the Superintending Engineer. Roughstone in mortar has been substituted for roughstone in mud for walls in foundations pending approval and the estimate increased from Rs. 7,200 to Rs. 7,840.

2. *Constructing a repair shop at Periyár.*—The estimate has been checked; it provides for constructing a repair shop and for all the necessary tools required for the shop. The Chief Engineer's remarks in the notes file as to fastening of the corrugated iron roof should be mentioned in the order sanctioning the estimate.

M.V.
22–7–08.

G. E. Brand,
22–7–08.

A draft order sanctioning the estimates is submitted and may, if approved, be circulated to His Excellency.

T. S. Ramiah.
3–8–08.

Muhammad Abdulla.
3–8–08.

S. Doraiswami Aiyar.
3–8–08.

I doubt if the substitution of roughstone in mortar for roughstone in mud in foundations is really necessary. I think all that is wanted at Periyár is a good damp-proof course or two.

T.W.S.S.
5–8–08.

[A | The Superintending Engineer's original provision of roughstone in mud for foundations and roughstone mortar for basement may stand.

C.A.S.
25–8–08.

B | The rate for roughstone in mortar for lascars' sheds is Rs. 25 and for the repair shop Rs. 30. Why?

C | There is nothing to show that the rates for either estimates have been checked in Technical section. Has any check been made of the truss for the roof and is it suitable? The estimates to be thoroughly checked in these respects.

C.A.S.
25-8-08.

Chief Engineer's remarks at **A** *in page* 3 *of the notes file.*—The estimate for constructing huts for lascars to be employed on the Periyár right bank escape has been realtered. The amount has been increased from Rs. 7,200 to Rs. 7,230 owing to some mistakes found in the detailed estimate.

2. *Remarks at* **B.**—No correct schedules of rates have been received for the divisions in VI Circle for the last two years. The Superintending Engineer in his No. 294 C.E., dated 27th May 1907 and No. 451 C.E., dated 5th October 1907, reported that schedules of rates for the divisions in his circle require complete revision and that it will take some time to come before a correct and reliable schedule of rates is ready. Data sheets for important items are generally attached to the estimates submitted by the Superintending Engineer; but no data sheets were submitted with the estimates in question. The rate of Rs. 30 per unit of roughstone in mortar allowed in the estimate for constructing a workshop was allowed to stand with the view that the above rate might have been allowed considering the very small quantity of roughstone (say nearly 3 units) to be brought to the site. The rate has now been reduced to Rs. 25 to agree with that given in the estimate for lascars' sheds, but there is no alteration in the total amount.

3. *Remark at* **C.**—The truss allowed for the corrugated iron roof for the workshop is strong enough—*vide* diagram put up for approval.

A revised draft order is put up and may, if approved, be circulated to His Excellency.

M.V.
18-9-08.

G.E.B.
18-9-08.

M.A.
18-9-08.

S.D.
18-9-08.

C.A.S.
22-9-08. | A round bar is the worst section to take compression, substitute an angle bar.

The principal rafter and the tension members are all unnecessarily heavy to take the load, which is as regards wind pressure more than is usually found necessary.

For orders if they may be reduced.

T.W.S.S.
21-9-08.

Approved, but don't cut them too fine. The main shaft is apparently to be carried as old rail posts, but no details are shown as to the method of giving the bearing stocks, and I am doubtful if an unsupported vertical rail will be suitable. This may be pointed out, but details left to the Superintending Engineer.

The horizontal L irons 3″ × 3″ in the partition seem a bit heavy too. Leave them but suggest to the Superintending Engineer the possibility of reducing scantling.

C.A.S,
22-9-08.

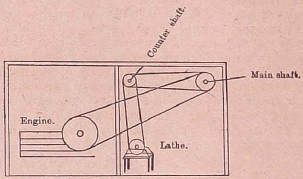
Under Secretary—

Angle iron bars $1\frac{1}{2}'' \times 1\frac{1}{2}'' \times \frac{1}{4}''$ have been substituted for the round iron struts of $\frac{3}{4}''$ diameter allowed for the truss bearing the roof of the repair shop according to the Assistant Chief Engineer's remarks. The remarks about the main shaft and scantlings of the other members of the truss, etc., are pointed out in the revised Chief Engineer's note put up below for approval.

M.V.
2–10–08.

G.E.B.
3–10–08.

A lathe is always worked through a countershaft and a drilling machine generally so. The machines cannot therefore be under the main shaft and the arrangement which will probably have to be followed is



Chief Engineer for Irrigation—

I have added a pencil note to the above effect.

T.W.S.S.
9–10–08.

As there are fitters at Periyár they should know all about this.

G.E.B.
3–10–08.

A fresh draft order is submitted for approval and submission to His Excellency.

M.A.
3–10–08.

S.D.
6–10–08.

T.W.S.S.
8–10–08.

Note for His Excellency—

The file relates to two estimates for Rs. 8,893 * and Rs. 8,596 * respectively for—

(1) constructing huts for lascars and
(2) building a repair shop at Periyár.

* Inclusive of Establishment.

2. Both are required in connection with the new right bank escape for the working of which 12 additional lascars are required, and the repair shop is to enable the Stoney's shutters with which the escape is fitted to be kept in working order. The steam launch and other floating plant also require repairs from time to time, which have to be executed on the spot.

3. Draft order submitted for approval.

C.A.S.
9–10–08.

Approved.

A. L[awley].
11–10–08.

Under Secretary—

Submitted that the draft order may now issue.

G.V.
12-10-08.

Issue.

T.W.S.S.
12-10-08.

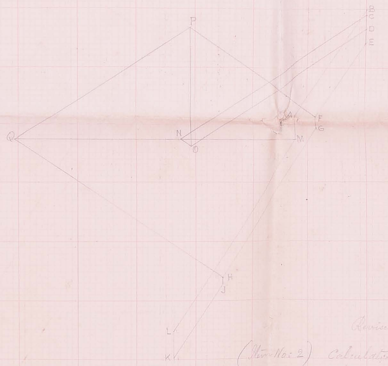
[Issued as G.O., Nos. 381–82 I., dated 19th October 1908.]

Workshop at Veriyar

Span – 15'–0"
rise $\frac{1}{3}$
Trusses are 10' apart.
Roofing – Corrugated iron 18 B.W.G. weighing 2.5 lbs per sft
Wind pressure normal to the roof = 34 lbs per sft
Max: horizontal wind pressure on
1 sft of vertical surfaces assumed to be 50 lbs (Col: Dove)

Scale $\frac{1}{25}$

Scale 1" = 5000 lbs



Vertical load on truss = 2×9×10×2.5 = 448 lbs
Wind pressure 10×9×34 = 3060 lbs

Details of Calculations

(1) Formula $W = \frac{PA}{1+c\left(\frac{l}{h}\right)^2}$

W = Safe working load on the member
P = 6 Tons per sq in (safe stress for compression)
A = Net cross sectional area of T allowing for 3 rivet holes of $\frac{1}{2}$" diar = .87 sq in
l = length of the member 54"
h = least dimension of cross section = 2.75"
C = for both ends fixed, for L, T, and ⊔ = $\frac{1}{1000}$

By substituting the corresponding values

$W = \frac{6 \times .67 \times 2240 \text{ lbs}}{1+\frac{1}{1000}\left(\frac{54}{2.75}\right)^2} = \frac{11692}{1.043} = 11210$ lbs against 2125 lbs actually required

Item 2 [illegible] of round bar angle [illegible] $\frac{1}{2}$"×$\frac{1}{4}$" substituted calculation on the [illegible]

(2) $W = \frac{PA}{1+c\left(\frac{l}{h}\right)^2}$

P = 6 Tons (as above)
A = .44 sq (for $\frac{3}{4}$" round bar)
C for solid round bar where both ends are fixed = $\frac{1}{3000}$
l = 54"
h = .75"

By substituting the corresponding values

Formula $W = \frac{6 \times .44 \times 2240 \text{ lbs}}{1+\frac{1}{3000}\left(\frac{54}{.75}\right)^2} = \frac{5913}{2.72} = 2174$ lbs against 1775 lbs actually required

(3) Formula is W = pa
Allowable safe tensile stress per sq in for mild steel = $7\frac{1}{2}$ Tons
a bar of 1" diar or .7854 sq in area will bear a stress of .7854 × 7.5 = 5.89 Tons against 2425 lbs required

(4) Formula is W = pa
Safe tensile stress per sq in (for mild steel) being $7\frac{1}{2}$ Tons
a bar of $\frac{3}{4}$" diar or .44 sq in area, will bear a stress of .44 × 7.5 = 3.30 Tons against 1025 lbs required

Note A T of $2\frac{1}{2}$" × $2\frac{1}{2}$" × $\frac{1}{4}$" weighing 4.05 lbs per foot run (vide Dorman Long & Co's catalogue) is capable of withstanding a compressive stress of 5287 lbs, is sufficient, but the Section 3"×3"×$\frac{1}{4}$" weighing 4.25 lbs provided by the S.E. being stronger, has been allowed to stand.

TABLE OF STRESSES

Nos	MEMBER	NATURE OF STRESS	AMOUNT OF STRESS	SIZE ALLOWED IN THE DESIGN SUBMITTED	SAFE LOAD WHICH THE MEMBER WILL SUSTAIN		Remarks
1	HQ	Compressive	2125 lbs	T 3"×3"×$\frac{1}{4}$"	11210 lbs	Ends supposed to be fixed. $W = \frac{Pa}{1+c\left(\frac{l}{h}\right)^2}$	Sections allowed in the design have got ample margin of safety
2	PQ	-do-	1775 lbs	⊙ $\frac{3}{4}$" diar	2174 lbs		
3	QM	Tensile	2425 lbs	⊙ 1" diar	5.89 Tons	W = Pa	
4	OP	-do-	1025 lbs	⊙ $\frac{3}{4}$" diar	3.30 Tons		

Revision in E. I's office

(Item No: 2) Calculation for the Strut PQ (in Compression)
Assume an angle iron of $1\frac{1}{2}$" × $1\frac{1}{2}$" × $\frac{1}{4}$" thick
Net area after deducting for one rivet hole of $\frac{3}{8}$" diar = .57 sq inch

$W = \frac{pA}{1+c\left(\frac{l}{h}\right)^2} = \frac{6 \times .57 \times 2240}{1+\frac{1}{1000}\left(\frac{54}{1}\right)^2} = \frac{7660}{3.92} = 1954$ lbs

against 1775 lbs actually required
An angle iron $1\frac{1}{2}$" × $1\frac{1}{2}$" × $\frac{1}{4}$" is substituted for $\frac{3}{4}$" round bar, as round bar is the w...

E. I. FORM No. 43—1,000—4-7-04.

REMINDER.

No 3662 dated 19-9-07

MEMORANDUM.

THE undersigned has the honor to request the Superintending Engineer Sixth Circle, to be good enough to expedite his reply to the reference noted below.

(By Order.)

~~Asst. Chief Engr. for Irrigation.~~ D.E.I.

CHEPAUK, 17 September 1907.

No. 1405 dated 11th April 07

Right bank escape of the Periyar lake:—Stating th[at] the estimate for construc[ting] huts for lascars to be empl[oyed] on the regulator at the ... cannot be sanctioned un[til] a full reply is received t[o] para 2 of this office memo 198-C d 6.7.06, calling f[or] complete proposals for the working of the escape.

DESPATCHED DATE 19/9 1907 ENCLOS.

To

The Superintending Engineer, VI Circle.

E. I. Form No. 43—1,000—18-10-05.

Office copy

2° REMINDER.

MEMORANDUM No 29.3

THE undersigned has the honor to request the Superintending Engineer Sixth Circle to be good enough to expedite his reply to the reference noted below.

(By Order.)

Asst. Chief Engr. for Irrigation.

CHEPAUK,
18 7/11 1908

Recd 18/11/08

Dt 17/11/08

No. 1405 dated 11th April 1907

Right bank escape of the Periyar lake — Stating that the estimate for constructing huts for lascars to be employed on the regulator at the —— cannot be sanctioned until a full reply is received to para 2 of this office Memo No 198-O dated 6-7-06, calling for complete proposal for the working of the escap

To

The Superintending Engineer,
VI Circle.

8

P.W.D. Irrigation

Memo No. 1523 dated 10th April 1908

x x x

pl. cf.

3. The estimate and plans received with his No. 191 C.E. dated 19th March 1907 are herewith returned with the request that those stated to be ready in his office may be submitted for sanction at an early date. The work should not be put in hand until after the estimate has been sanctioned

T.W.S.q.

9.4.08

4
[illegible] 9468/08

Estimate for constructing sheds for lascars and repair shop at Periyar, Madura District.

PUBLIC WORKS DEPARTMENT,
IRRIGATION BRANCH.

CURRENT No. 9468
PASSED ON BY
R. C.
REF.
R. K.
D. O.

RN 3783

H.E

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

From The Supg. Engineer VI Circle,		No. 191 C.E., dated 19-3-07.
From	-do-	No. 204 C.E., dated 27-3-07.
To	-do-	No. 1405 dated 11-4-07.
To	-do-	No. 1523 dated 10-4-08.
From	-do-	No. 302 C.E., dated 10-6-08.

Print Reports.
Print Notes.

Note by the Chief Engineer for Irrigation.

With the last of his letters read above, the Superintending Engineer VI Circle, submits two estimates amounting to Rs. 7,200 and Rs. 7,860 respectively (1) for constructing huts for lascars to be employed on the Periyar right - bank escape and (2) for building a -- repair shop at Periyar. The estimate for the first work has been increased in this office to Rs. 7,230 owing to some errors found in the detailed calculations.

2. In the estimate for the second - work, angle iron bars 1½" x 1½" x ¼" -- have been substituted for the round - iron struts of ¾" diameter allowed for the truss without affecting the total of the estimate. The scantlings of the other members of the truss and the -- horizontal angle iron bars allowed for the partitions seem unnecessarily heavy and are susceptible of reduction. The main shaft is apparently to be carried

on old rail

Issue
12/10/08

4
9468/08

Estimate for constructing sheds for lascars and repair shop at Periyar, Madura District.

RNo 3783

H.E

PUBLIC WORKS DEPARTMENT,
CURRENT No. 9468
IRRIGATION BRANCH.
PASSED ON BY
R. C. 17.10.08
REF.
R. K.
D. O.

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2. In the estimate for the second work, angle iron bars $1\frac{1}{2}" \times 1\frac{1}{2}" \times \frac{1}{4}"$ have been substituted for the round iron struts of $\frac{3}{4}"$ diameter allowed for the truss without affecting the total of the estimate. The scantlings of the other members of the truss and the horizontal angle iron bars allowed for the partitions seem unnecessarily heavy and are susceptible of reduction. The main shaft is apparently to be carried

on old rail

2/ 8..8

rail posts but no details are shown as to the method of joining the bearing blocks and it is doubtful if an unsupported vertical rail will be suitable. These points may, however, be considered by the Supg. Engineer during execution of the work. He should also see ~~in course of execution of the work~~ that the corrugated iron roof of both works is fastened with Windle's patent clips (vide metal price list of Messrs Jessop & Co.,Ltd, Calcutta), as it is believed that this form of fastening will be found more satisfactory than those hitherto in use. With these remarks the estimates are recommended for sanction.

vide E.I.'s note on p 89 N.f.

flag Y

pp 4 + 5 9 N.f.

The arrangement of the machinery shown in the plan will require modification as lathes are usually worked from a countershaft and not from the main shaft.

11.10.08

O R D E R. No 381-I Dt/19-10-08.

The following estimates are sanctioned:-

Imperial.

Capital expenditure not charged to Rev

49 Irrigation.

Periyam System.

Open Capital Account.

I Works.

1 Head Works.

K Buildings.

Unremunerative Works.

(a) Constructing sheds for lascars at the Periyar right bank escape.

I Works. -------	7,230
II Establishment.	1,663
Total.	8,893

(b)

Read 8

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(b) Constructing a repair shop at Periyar.

	I Works.	3,200
Estimate	II Establishment. .	736
	III Tools and Plant (2 plant & machinery)	4,660
	Total.	8,596

2. These sanctions are registered as Nos. 76 - I and 77 - I of 1908-09. and will expire on the 31st March 1910.

3. The attention of the Superintending Engineer, VI Circle, is drawn to the remarks of the Chief Engineer for Irrigation in the foregoing note.

4. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

Endorsement No 382-I 19-10-08

DESPATCHED -4 DEC 1908

Forwarded.

8/10/08.

To
The Chief Engr for Irrgn.
" Supg. Engr VI Circle with plans & estimates. D 22/10/08
" Examiner P.W.Accts
Ordinary Press.

DESPATCHED -4 DEC 1908

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2/10/08 2/10/08 6 10

Sd. 1 — 10.88

Notes 1 — 12

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